CDC's AMD Initiative

AMD Projects

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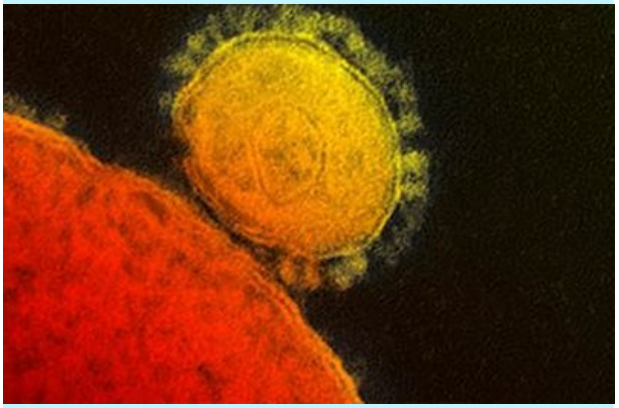
CDC's Advanced Molecular Detection (AMD) initiative fosters scientific innovation to transform public health and protect people from disease threats.

AMD Projects: Identifying the Unknown

Using targeted and metagenomic sequencing to identify and characterize pathogens in unknown respiratory disease outbreaks

Coughing? It could be whooping cough, the flu, pneumonia, or a slew of other respiratory illnesses. Sometimes during outbreaks it's not so easy for medical or public health professionals to diagnose respiratory illnesses quickly. This is why CDC brings together highly skilled epidemiology and laboratory respiratory experts to form the Unexplained Respiratory Disease Outbreaks (URDO) work group. CDC epidemiologists look at the characteristics of the disease and patterns of an outbreak. CDC laboratory scientists help solve the mystery by identifying the pathogen causing an outbreak. But, there is a problem. Current diagnostic techniques slow down the laboratory work, wasting time needed to control the outbreak and protect the public's health.

CDC is developing a new tool to help laboratory scientists quickly identify which germ—including new, emerging, or rare ones—is causing an outbreak. With targeted sequencing analysis, scientists will identify and characterize pathogens in respiratory specimens from URDO responses. They will also be able to determine the specific strain responsible for an outbreak and whether or not that strain is resistant to antibiotics.



New coronaviruses can appear unexpectedly in different parts of the world, causing outbreaks of respiratory illness. Identifying and stopping respiratory threats quickly increases global health security.

By using a single and quick analytic tool, CDC will be able to identify the cause of a respiratory outbreak faster. This means that effective prevention and control strategies can be implemented more quickly, which protect people's health.